

We Claim:

1. A method of operating a satellite communication system comprising:  
coordinating multiple terminals in a satellite network such that the symbol timing of each of the multiple terminals in the satellite network are synchronized;  
configuring a frequency separation for each of the multiple terminals to obtain near orthogonality condition at the reception between a desired demodulated channel and transmissions on neighboring channels.
2. In an orthogonal frequency division multiplexed satellite system, a method comprising establishing symbol synchronization between multiple remote terminals utilizing a central clock recovered from a reference downstream channel output from a satellite.
3. A method comprising providing satellite location information which relates slight movement of a satellites to a plurality of remote terminals employing orthogonal frequency division multiple access.
4. A method of claim 3, wherein said satellite location information is utilized by said plurality of remote terminals to correct timing of transmissions with individual timing correction to each of said remote terminals.
5. A method of claim 3, wherein said satellite location information relates to a single axis of said satellite.
6. A method of claim 5, wherein the part of said satellite location information is the distance of said satellite from a hub.
7. A method of claim 3, wherein said satellite location information is an absolute location.

8. An apparatus comprising a hub including one or more antennas, RF transceivers, modulators, demodulators, clocks, and digital signal processors, said hub being configured to receive signals using an OFDMA scheme and to transmit timing information to a plurality of remote terminals based on satellite location information.

9. An apparatus comprising a hub including one or more antennas, RF transceivers, modulators, demodulators, clocks, and digital signal processors, the hub being configured to receive signals using an OFDMA scheme and to transmit timing information to a plurality of remote terminals based on a timing synchronization feedback/acknowledgement loop.

10. An apparatus comprising a hub including one or more antennas, RF transceivers, modulators, demodulators, clocks, and digital signal processors, the hub being configured to receive signals using an OFDMA scheme and to transmit information related to synchronization of a plurality of remote terminals, said information relating to both synchronization feedback/acknowledgement loops and satellite location information.

11. In an orthogonal frequency division multiplexed satellite system utilizing multiple satellites, a method comprising establishing symbol synchronization between various remote terminals by utilizing a single reference clock coordinated by said multiple satellites to said remote terminals.

12. A method of operating a satellite communication system comprising:  
providing multiple terminals in a satellite network with satellite location information relating to movement of satellites around a nominal locations so that timing of transmissions may be corrected based on a tracking algorithm for detecting movement of said satellites.

13. A method as recited in claim 12, wherein said tracking algorithm is accomplished with individual timing correction of transmissions to each of said multiple terminals.

14. In an orthogonal frequency division multiplexed satellite system, a method comprising establishing symbol synchronization between multiple remote terminals utilizing a central clock utilizing an individual timing correction loop.

15. A method as recited in claim 14, wherein a hub may enforces global timing synchronization by sending individual timing correction requests and receiving acknowledgements to each individual terminal to determine any necessary timing corrections.

090403460